



Ashman Center  
September 25, 2002

The Dow Chemical Company  
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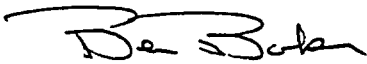
RE: NRC LICENSE STB-527

In a letter dated August 5, 2002, NRC notified The Dow Chemical Company (TDCC) that the detailed technical review of the revised Supplement would begin. At a meeting held July 23, 2002, NRC agreed that the review could be prioritized to address six major issues in an expedited fashion prior to TDCC completing the additional background and site groundwater (GW) analyses. The GW results are expected by October 24, 2002.

The six major issues identified were the four items listed in TDCC's July 8, 2002, letter to NRC, the frequency of the saturated zone borehole samples for final survey, and the composite depth of saturated zone samples. These six issues are not dependent on the results of the GW analyses to be conducted. It also appears that, in addition to the six issues listed above, most of the information provided in the revised Supplement is independent of the  $Ra-228_{\text{water}}/Ra-228_{\text{slag}}$  ratio and could be reviewed by NRC prior to receiving the GW results.

One of the four issues identified in the July 8, 2002, letter relates to background subtraction when determining compliance with the GW criteria in the SDMP Action Plan. TDCC believes that their responsibility under the NRC license is for licensed material only and not background. We have performed a review of the bases for the SDMP Action Plan GW criteria and believe that the results of this review support TDCC's opinion (see Enclosure 1).

Both TDCC and NRC have spent considerable time and resources in the preparation and review of the Supplement. It is important that we continue to make progress in a timely manner to ensure that an approved Supplement is in place before January 2003. This will allow DOW to effectively prepare for remediation activities during the 2003 construction season. Providing RAI's on all portions of the Supplement that are not dependent on the  $Ra-228_{\text{water}}/Ra-228_{\text{slag}}$  ratio, prior to receiving results of additional GW analyses would ensure timely progress.

  
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Enclosure (1)

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NM 5801

## Enclosure 1

### Discussion of SDMP Action Plan Criteria for Groundwater

The Dow Chemical Company (TDCC)  
September 25, 2002

From the outset of decommissioning planning for the Bay City site TDCC has interpreted the SDMP Action Plan criteria for groundwater as applying to residual contamination resulting from licensed activities and not including background radioactivity. TDCC's opinion that the SDMP Action Plan criteria apply to contamination from licensed operations only, and not background, appears to be supported by a review of the SDMP Action Plan, referenced guidance documents, and the case example as described below.

The SDMP Action Plan states that the EPA Interim Primary Drinking Water Standards should be used as reference standards for protection of groundwater "in accordance with FC 83-23..." TDCC reviewed FC 83-23 "Termination of Byproduct, Source and Special Nuclear Material Licenses" to understand how the drinking water standards are applied in this document.

In the first paragraph of FC 83-23 a statement is made that licensees are required to "... specify existing levels of *residual contamination present from past operations*." It also states that "If levels of *residual contamination attributable to licensed operations* are found the license continues in force until ... the license is terminated." It is clear that the FC 83-23 definition of contamination includes radioactive material from past licensed operations and does not include background.

Page 2 of FC 83-23 provides "Contamination Levels Generally Acceptable for Unrestricted Release" for surface contamination, soil contamination, and water contamination. There is no question that the *contamination levels* listed for soil and surface criteria include radioactive material from licensed operations and do not include background. There is no reason to believe that the intent of the FC 83-23 definition of *contamination levels* for groundwater is different from the definition applied to soil and surfaces since the term is used in the same section and in the exact same context. FC 83-23 states that "If surface or groundwater *contamination* is below EPA's National Primary Drinking Water Regulations the *contamination* is acceptable for unrestricted release." It appears clear from TDCC's review of 83-23 that the drinking water standards were intended to apply to radioactive material from licensed operation and do not include background.

TDCC also reviewed SECY-01-0156, "2001 Annual Update – Status of Decommissioning Program," to identify any case precedents regarding NRC application of background to the water standards. The staff's discussion of the Fansteel site in

SECY-01-156 appears directly applicable. In Attachment 7, Page 17 of 60, the staff states that "Groundwater Contamination is non-uniformly distributed at the Fansteel site. Gross Alpha ranged from.... These levels of contamination were confined to the shallow groundwater zone. Sampling analysis of deep (bedrock) groundwater wells detected no concentrations above background levels. Therefore, the radioactive contamination of groundwater appears to be confined to the shallow alluvium at the top of the bedrock." The definition of contamination used by the NRC staff in this case is consistent with the definition provided in FC 83-23 and it is apparent that the staff is not considering GW concentrations that do not exceed background.

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In conclusion, TDCC continues to interpret the groundwater standards provided in the SDMP Action Plan as applying to residual contamination from licensed materials and not including background radioactivity.